

I. THE STATUS OF THE CLAIMS

Claims 1 - 23 and 25 - 28 are pending. Claim 1 has been amended to incorporate the limitations of dependent claim 24, which has been canceled by amendment herein. Dependent claims 2 - 11 and 25 - 28 have been amended to maintain consistency with amended claim 1. Independent claim 12 has been amended to depend from claim 1, and claims 13 - 23 have been amended to maintain consistency with amended claim 12.

Claims 18 - 23, directed to the method aspects of the invention, were withdrawn from consideration by the Examiner's Office Action mailed March 16, 2000. Applicants will cancel these claim from the present application once the remaining claims are deemed by the Examiner to contain allowable subject matter.

II SUMMARY OF THE INVENTION

The claims as amended define a motion transmitting cable assembly which comprises a motion transmitting core and a tubular liner disposed around the core. Importantly, the pending claims all require an assembly in which the core is "**moveably disposed within the tubular article.**" This limitation is critical to the present claims because it defines a structural relationship that can produce numerous and unique problems. Applicants have developed, and are now claiming, a unique and unobvious solution to this particular set of problems. More particularly, the inner wall of the present tubular liner is exposed to the abrading force generated by the movement of the motion transmitting core, and this relative movement has created the need for a liner that possesses a difficult to obtain combination of properties. For assemblies in which a tubular article is non-movably attached to the core, the

problems associated with obtaining this combination of properties do not arise. As explained below, the primary reference which forms the basis of the Examiner's rejection relates to a composite tubular article that is non-movably attached to the core, and therefore this article does not even have the same or even similar set of requirements and therefore can not address the problems addressed by applicants or suggest applicants' unique and unobvious solution.

III. THE EXAMINER'S REJECTION

The Examiner rejected all of the previously pending claims as being unpatentable over a combination of references in which the primary reference was U.S. Patent No. 5,636,551 Davidson et al ("Davidson"). The Examiner has acknowledged that Davidson shows "cable assemblies that employ a cable covering for a steel wire comprising an inner polytetrafluoroethylene ("PTFE") layer (13) and an outer graphite-containing PTFE covering (17)....They do not show the use of organic fillers in the inner layer." (Office Action Paragraph 4). The Examiner also cited secondary references to Khattab et al and Gruel as teaching generally the use of organic polymers in combination with PTFE.

IV. THE CITED REFERENCES DO NOT SUGGEST THE CLAIMED INVENTION

Applicants respectfully submit that the outstanding rejection was improper because it failed to recognize that the composite covering 13/17 of Davidson does not satisfy the requirement of former claim 24 (now claim 1) for a liner used in a motion transmitting

assembly in which the “motion transmitting core” is “movably disposed” within the liner.¹ This critical requirement is simply not satisfied by the combination of layers 13 and 17 of Davidson. Davidson makes plain that layer 13 is a “fluoropolymer adhesive” (Col. 2, ll.59 - 61; col. 3, ll. 3 - 4; and col. 3, l. 16), and that the purpose of this layer is ensure that the “outer layer of porous expanded PTFE 17 is caused to become adhered to the wire...” (Col. 3, ll. 36 - 38). Davidson explains that the layers 13 and 17 together become part of the motion transmitting core, and can not in any circumstances be a tubular article in which the core is movably disposed:

...the covered cable should be heated to cause the circumferentially oriented fibrils of the tape to shrink and thereby further **increase the adhesion of the porous expanded PTFE tape to the wire core.** Shrinkage of the tape during heating forces the melted fluoropolymer adhesive into the void spaces of at least the inner surface of the porous PTFE tape.

(Col. 3, ll. 36 - 45). See also col. 3, ll. 46 - 57 and col. 4, l. 34 - col. 5, l. 9.

The mechanical cable core of Davison, which includes the bonded layers 13 and 17 described above, “is preferably operated within a support tube 19.” (Col. 4, ll. 10 - 12). Thus, the support tube 19 would appear to constitute a tubular article within which the core is movably disposed. However, it is critically important to note that while Davidson teaches that this support tube “may be comprised entirely of a non-porous... PTFE,” it contains not

¹ Applicants limited claim 1 as described herein for the purpose of facilitating prosecution of the present application, but not as a concession that the Examiner’s rejection of claim 1, or any other claim, was proper or factually based. Applicants hereby expressly reserve the right to pursue claims defining subject matter which is the same as or similar to original claim 1 in a continuation application.

even the slightest suggestion that the such a support tube should be comprised of a composite in which the inner layer contains organic filler and which the outer layer contains inorganic filler. This is not surprising because Davidson fails to even acknowledge the problems overcome by applicants' invention. For example, Davidson nowhere address the problem of frictional efficiency drop-off after repeated use or the problem of abrasive slurries caused by the use of inorganic fillers at the interface between the core and the supporting tube. Yet, these problems are specifically addressed by the structure of the present invention. (See specification at page 6, lines 14 et. seq.)

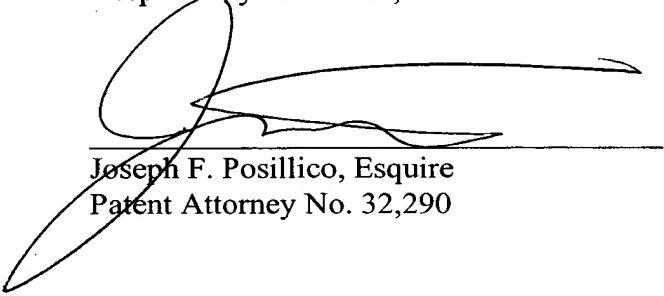
There is nothing in any of the Examiner's secondary references which overcome the significant deficiencies of Davidson. More particularly, Khattab et al discloses a composite of nylon-6 and a minor amount of PTFE. There is nothing in Khattab et al which suggests motion transmitting cable assemblies having the composite tubular liners as now claimed. Similarly, Gruel relates to a first layer of a very specific interpolymer of TFE and an allylic-hydrogen containing olefin monomer and a second layer of a melt processable polymer. Once again, however Gruel is totally devoid of any teaching or suggestion of motion transmitting cable assemblies having the composite tubular liners as now claimed.

V. CONCLUSION

For all of the reasons specified above, the claims as now presented define subject matter which is novel and patentably unobvious over the cited prior art. Accordingly, applicant respectfully requests withdrawl of the outstanding rejections and the early mailing of a notice of allowance.

Should the Examiner have any questions about the amendments or arguments presented herein, the Examiner is invited to contact the undersigned by telephone in an effort to facilitate prosecution of the application.

Respectfully submitted,



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